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RVs. A D Vs
$\frac{40}{V}$ SKYEYMAKKILENVGGKENITDYENCMTRLRLVLADASII SK NERAAAVI KYKALARD S
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ENAPHVI A A L G G GENAVSIVDACDT RLVVEVLDKS KV

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K A R A I L A S S G G G R T N
Y E DLSKKI I A GVGGKDNVKSVVHCTTRLRFKLKDESVA
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| $N$ | $V$ | $V$ | $D$ | $K$ | $N$ | $K$ | $V$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $N$ | $K$ | $E$ | $L$ | $A$ | $Q$ | $E$ | $V$ | $K$ | $L$ | $I$ | $G$ | $G$ | $T$ | $E$ | $N$ | $I$ | $S$ | $Q$ | $S$ | $W$ | $H$ | $C$ | $I$ | $T$ | $R$ | $L$ | $R$ | $F$ |
| $N$ | $L$ | $N$ | $N$ | $E$ | $S$ | $K$ | $V$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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 QEIAKKK D D L A SIIVQNVGGEG$\mathrm{T} \square \mathrm{S}$

 Q QLA K QVVED I G GK D NI QSLTTHCVT RLRFK LK DRSLA
 SANKEAAKQILEAI GGKENI ASSATHCVTRLRFALHDEGKV Y N MLLA G E I I E HV G G K E N I V S LTo H CI T R L R F S L K D S K K F
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NHAKVAKDVLNALNGK
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NYNEIA EKI I HEVVGGAK

 Y A P RAA GFLELLGGADNITTVNNCATRLRVSVADESTV S Y T S L A K E I L Q H G G G N NV N S L E H C A T R L R F K V K D S N K V $K Y$ S R MA NVI Y D A V G G Q D N I R S Y Y N C A T R L R F E L D D V D QV

YRKLGQEI TELVGKKE
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K Y Q H E A Q E L L K A l G G K E N I T T A V T
SKYNEESKRLLEYI GGKENITSVTHCATRLRFALVDDKKA
YKKTA $\quad$ SSI I E LVGGE GNVQNVIHCMTRLRFNLQDQSKV
Y NKVSKDI L QL V G GEENVQSVVIHCMTRLRFNLYDNAKA
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Y T QTAKEIVANI GGKENVAHLEHCSTRLRFTLDDNAKA
 QELP F NVLN A M G G Q G NI K HL D A C DT R L R VEVVQDTS TV K NERLAQQI LE Y LGGTENI ESITHCATRLRPSLKKRELV

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D S QRA HR SQRAETI
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NK QI A QDVLEEVGGGEKNINSVVHCATRLRFKLKDSSVA
Y NKL GLDDI LAALVGGKGNVSKLTHCATRLRMEFNDDSRV


S S REEKADIKFI EAL G GKENFKNI DACDTRRLRLTLVDCNND
SGYN VPALLNALGGAENDDSLDNCITRLRLVVKDMSRV NFPKI A QQVI EKLGGGKENI ATAAHCATRLRIVLHDESKV
 T S LIN DEA Q II I K A L G S K T N I E S V EA C A T R L R V A V V D G R MV T NK H E MA S DLL S L L G GK D N LA A K A B M G K E N

LA A KLLEFMGGKEN
KFESQAKDLLTAIGGKENIKAVTH
TKY QE TA K A
Y K A VGR KV L A A V G G E K N I Q H V T H C C
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 Y K K I A G DI I Q N V G G K E N I K G M T Y C F T R L R F V L K D S K K V Y A K LA K E L L D L M G G K Q N V K DVV T H C A T R L R F N L K D D S V

T A V A V A L L P L L L G G K E N L V T I D D N C T T R L NY DELADAI I E RL G GKDNV SFHTHCVTRLRFNVKDKS LV KF TAMAAQI YEGLGGDGNVTSVDNCVTRLRVEVDDMNKV LA EKI I H LI G GEENNI DRVIDHCVTRRMRY LKDNTQA N WR A I A EV $\vee I K G L G G K D N$ AKALLQAVGGKDNI AAVSHCATRMRFVLNDEKQA NYNELGADVILDLVGGKDNVTGLDHCATRLRFNLKNE GLAA

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| $Y$ | $K$ | $K$ | $I$ | $A$ | $K$ | $S$ | $V$ | $I$ | $K$ | $A$ | $V$ | $G$ |
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DKK】AE S S K D D R P F TAFESSLA QNVVVD D L G GENN NS DVA $K \quad Y \quad$ S S L A A D I I K K DLAK QI V E K L G GKNNV K Y Q HI A E EI I K IVG
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V S A L I T K G L G GK A N I $\begin{array}{llllllllllll}N & Y & D & A & K & A & Y & H & Y & L & Q & A \\ L & G & G & P & E & N & I \\ G & L & T & Q & L & A & T & S & Y & I & A & A \\ V & G & G & T & D & N & L\end{array}$

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$D \square E G|K A D K G \nabla M A V V V N A Q F Q V V T G Q D V T E| V|Y D V L| A K$



Q I E A L K K DGGV L G V Y D A G E E L Q I I F G P G V D R V T E A F L L


 $D Q K A L K D P D \square K G T F D A G G M Y Q U I V G P D V D Q V F D R M$


S Q A QL T A L GCQ GVVSRMDA GV HL LVVGEQAQ G L S A A L K A L




 EDS GYHEQMSHGLVKSGKNVQVVVGMTVPQVREAFEHVV

D QPAVMMAAGVPGLNVLDHNDHVVI GTEVQFVAEALQKL


 DEDKI K K L $\quad$ VP Gll LK S K N A V Q V I

$\left.\begin{array}{llll|lllllllllllllllll|ll|l|lll|llll}\text { D } & E & K & Q & V & E & S & I & G & V & M & G & A & V & Q & S & G & N & R & Y & Q & V & V & I & G & G & A & V & E & S & V \\ N & E & A & N & D & I & M & A & L & \\ A & K & E & T & G & V & L & G & V & V & N & D & E & T & Y & Q & V & I & L & G & P & G & V & N & K & V & A & E & Q & F & G\end{array}\right)$

$D Q A A L D S D P V L G V V P Q G T G M Q V I M G G G G A D Y Y Q A D N G L$
$D \mathrm{KV} W \mathrm{~K}$ Q Q L




 $D \square E K L E N D D V K G V F D A G N Q L Q L I \quad F G A G V N E V Y E V F S R Y$




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70
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SDYF THEQMAHGLVKSGRS IQVIVGMSVPQVRDYF

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S QH GL E S I GVLGAFRT GNRYQVI I G GAVASVYEQDVRM
 D QK TL D SP DI K GTFRSNGQYQI I I GPDVNFVYAELIK



K D D L I I N K V P N N S G I





S D S G L


D QEALR QVGVMGLVVQD QVQVI LGPKVNQVGSAFAQL




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$\mathrm{Y} \square \mathrm{ARATG} \mathrm{\| V} \mathrm{D}$ $S R E K D \square A E S I I R E L G G K E N V V S I T N C M T R L R V L A K D Y D K I$


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 K F S

LIQ T D GS DLLSAL:AA $L$ L G GKEN I


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$\begin{array}{lll}\mathrm{V} & \mathrm{S} & \mathrm{V} \\ \mathrm{V} & \mathrm{S} \\ \mathrm{E} & \mathrm{D} & \mathrm{I}\end{array}$


AT H C C V T R R L
DALARATLGATGGASNVRSASYCTRLRFEVKDYRQV
K Y
 TERA EK $\quad$ R A A L G GAA N I S K L DAA A T R L R V E L S D A S R I
$G V D N I D E I E P C T T R L R S L V R D A G Q V$
RDFlAACGGRTNFVSLRTSPTQLIVSFAKPELV


MTHCATRLRFQVRDQSAV
 $L$ A GTVVVQA L G S L N N I E S V D S R M S R L S L V V K D S S L V


NALLTALGGRDNLTDVKSSPSKLTVALKNHDLV


 K F D F K K I E E L V
 N Y D QLA K E I LS RVGG $\quad$ E SVVT I I I H C

NYNADVAK R VIDA A VG E D N L A A A A H CA T R L R


lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
jhmm
jpssm


|  | UniRef90_V9R |
| :---: | :---: |
|  | UniRef90-R5MUZ8 |
|  | UniRef90 UPI00034A341D |
|  | UniRef90_C0QXB5 |
|  | UniRef90 S3EHH8 |
|  | UniRef90-R7M2P7 |
|  | UniRef90-H1PRR7 |
|  | UniRef90_UPIO00466CE63 |
|  | UniRef90-E5VPY0 |
|  | UniRef90_A0A024QH91 |
|  | UniRef90-B9Y641 |
|  | UniRef90 UPI0002FA8E1E |
|  | UniRef90 W5USI1 |
|  | UniRef90-C0W1C1 |
|  | UniRef90-B5WP15 |
|  | UniRef90_D3VQ82 |
|  | UniRef90_UPI000464AC10 |
|  | UniRef90 A6M0Y8 |
|  | UniRef90-S1CCK7 |
|  | UniRef90-R4YA03 |
|  | UniRef90-M1MGC9 |
|  | UniRef90-D0GNG1 |
|  | UniRef90_E8LWR1 |
|  | UniRef90-UPI00047C9A6C |
|  | UniRef90-UPI0004706D24 |
|  | UniRef90-A8S5Y4 |
|  | UniRef90-Q39MM9 |
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|  | UniRef90-S5EKP5 |
|  | UniRef90-C6VNE2 |
|  | UniRef90-B5WP16 |
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|  | UniRef90-Q49397 |
|  | UniRef90-E7G8E0 |
|  | UniRef90_UPI0002EAE82D |
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|  | UniRef90-UPI0004658A24 |
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|  | UniRef90_L0RV60 |
|  | UniRef90-Q9PQW5 |
|  | Ref90_R5ZGIO |


NKDGITSGGATGIVEIDNQLKI I FGKDAKELKKCDDDLL RDAE: RE HPVLGVV DDETYQVVLGPGVGRVTEEFFTRLVVE DKEKLKKLGAKGVVVVSGGVQAVFGTKSDNLKTDMDEWIN
 K $\square \mathrm{N} D \mathrm{~L}$ KTUNLKGVLWSN NDRMLQKSGSRGI SKK
$D V K G L K E L D V M G V V K A E T L Q I V G P G$
NFSQI QRIGASRVVESRAGYSVNFGAGST\|IKNEDNKRDK DMSULNKVKSSGIVDKGKHDQ।VIGMG SEDKLKAAGADAIVEGNNHVQAILGP
NEQLI RETN PLLAVVCSGNYVQIVTGPDADGVVAQMQREL DEPKLKA LGAAGV
NKDKLDEQGASGINFVGNHDQVKFGLKTVKLAKSTREL

 QAEVLKKTGI DMVVEV
D S S TLK G L GVLGA A S A
DVGQFKKVGVLGIVETKEQLQUILEPKKAKD
$N L S E L K K V G V L N V V E A D T G Q i V L G P K V N S V G Q E F S K L$
DEKLLRRQGALGFI RPENQIQVVF FDVHNLAEELR
DEAGLKNTQASGVVKKGNN
DTAALDANEVKGHFSTQGQFQVIIGPGVDSVFEEFMSDTD NEQAVK AAGIIRPGKNCQVIVGTNVKSVYDELDKLLK DVAALKA LPAVLGVVPGEPLQ
NDDVLKKMDGIVTVIK $V$ V
D R P GI EDLGGVKALLEVDTEYQLVVGPGARPLYQALVAL ASNRFIADGAVNVVRHGKADQVIVGLDVPQILSVMRQLI DAAGLKAAGVVATQLKNGAI DLIVGLGAGNLAGAMR $D V G A L R A A G A Y G V M I N G R V V Q V V V G P H V D L I A S D L D D L M$ QIAALQKLGGKGINKSQNQYRFVLGNFVNQLKQQIEN DRMGLSAAGVAGVMTLDNGVHLIJTG DTKNCKS
DVAA LLKA A GVPGVVLAGGTVHLLTGLQ
DQQTIDSPSVLGVVPQGTGMQVVMGGSVANYYQEMLKL DEAGLND DGVLGSLKLGDGDEIVCRPTVQADFESFSRL NLDMLKENGLSEIIVMEKK VVIVVGDEASKLSSD VSNLLE DKLRLKQLGAK
NLKELKNIPVLGVNLNDNELQIILGPKVNEVTSEFKKLYA $D R Q A L T A A G V P G V M M L D G G V H L I T G L Q$
S LTKLNALNIKGINKNQNQFRFVLGNFVNELKKKDED
$K V E D I Q K L G A S G I V E G K E N L S M \Delta F G K Q S S L I A E D L K R Y L$ $D T A A L K A A G V P G V M M L T G G V$ NDTGLRVLG
QEDKLKQLGVSSF $\square K M S N K L T L V I G E E A K D \square$
E DDKLNE GVVKAFASEGKVQIVMPGYGDKVFEYDN
D F K K D $\square$ D A
KTEWLRQ
QLA ALERVGVLGVVHGDDQDQUILGPGKAQTASEMMNAL NKETASNIGVINLVVQNGEYQFVIGQDVAMLYEEF DQAALDK
DRDRLGA LDVAWV SPDTFH VVCGNAAARYAEQL
DPN I KTL E GVG
N $\square E E L K K L G I S G D A L N S Y G V S L V V G N N A K Y \prod A E K D D K E D K$ TANEVTQI GVASVDENETQLVIVFNEEVKYVYQQLQLLMD
 NNEKLKVLGAK GI MCNQTKI SUI FGDFCLEELKELI KK DP K K L D E E G L K G S I I M G Q K V M F P V G S Q A E E F A K DL K N K

[^0]

lupas_21
lupas_14
lupas_28
jnet
conf
sol25
sol5
sol0
jhmm
jpssm


[^0]:    lupas_21
    lupas_14
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    conf
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    jhmm
    jpssm

